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# GREAT LAKES MANAGEMENT

DEC 1 6 1987

## FORESIGHT FOR THE FUTURE

COASTAL ZONE  
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Michigan Coastal Management Program  
Division of Land Resource Programs  
Department of Natural Resources  
March 1983

Michigan Coastal Management Program

"...a program that works as demonstrated by the results and the continued positive comments."

MACKINAW CITY  
Ron Wallin  
Village President

"...the most effective and efficiently managed grant program in the country."

HOLLAND CHARTER TOWNSHIP  
Willis E. Driesenga  
Superintendent

"...to express once again our high regard for the state's Coastal Management Program.... We take great pride in our resources and I can safely say that these accomplishments could not have occurred without the assistance of the Coastal Management Program."

ROGERS CITY  
James E. Leidlein  
City Manager

"... I wish to thank the Michigan Coastal Management program and its staff for taking such an avid interest in our community..."

ESCANABA  
Cecil B. Chase  
Mayor

"We are particularly appreciative of the assistance and cooperation given us by you and the members of your department."

MARINE CITY  
Norm K. Robinson

"The significance of the Coastal Management Program for the Recreation Department of the City of Detroit cannot be underestimated."

"The flexibility of the Coastal Management Program approach, which sees the multi-use possibilities of coastal resources, has been especially helpful. The flexibility and creativity of the staff has been even more helpful."

DETROIT  
Harriet Saperstein  
Recreation Facilities Coordinator

## GREAT LAKES MANAGEMENT

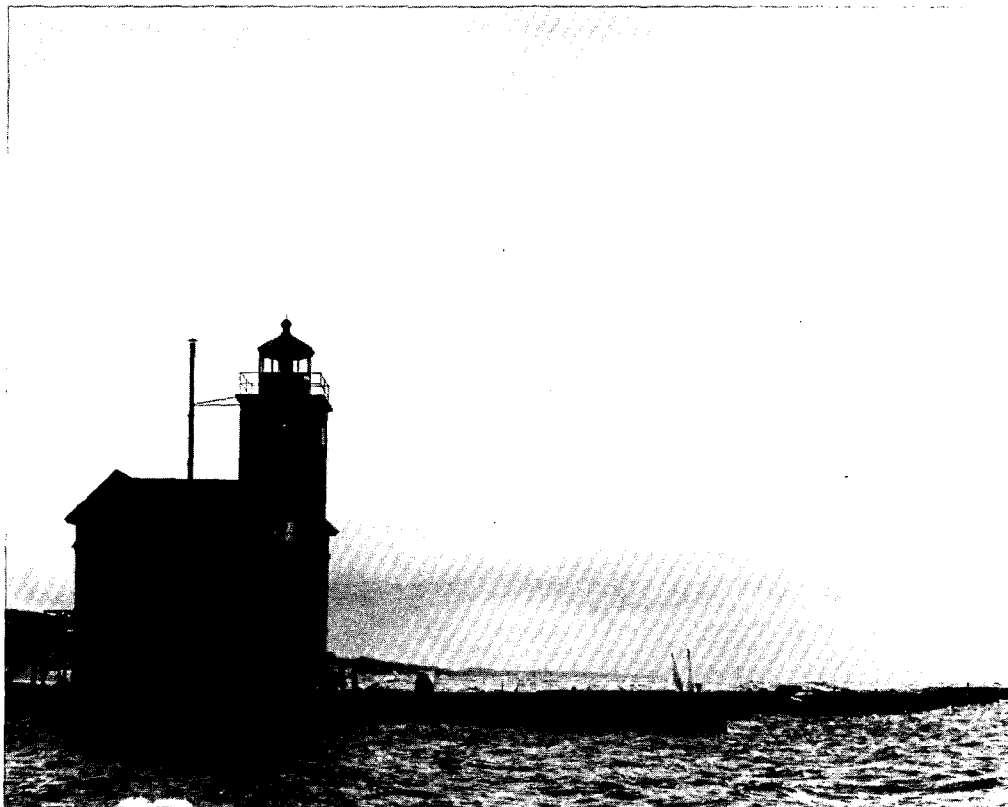
### FORESIGHT FOR THE FUTURE

#### Introduction

The Great Lakes were designated as the nation's "Fourth Seacoast" by the United States Congress in the 1970 amendments to the Merchant Marine Act. The Great Lakes represent 95 percent of the fresh water in the United States and comprise the largest body of fresh water in the world. They provide drinking water for 70 percent of the region's population, a 2,340 mile-long commercial water transportation route, and 95,000 square miles of surface water for recreational use.

Michigan, the "Great Lakes State", is surrounded by four of the five Great Lakes with over 40 percent of the area within its political boundaries covered by the fresh water. Michigan's shorelands encompass large industrial complexes, commercial harbors, intensively used parks, beaches and resorts, agricultural land, energy facilities, residential areas, marshes for waterfowl and fish, and long stretches of undisturbed shores.

Our 3,200 miles of shoreline offer unique economic, ecological, cultural and recreational opportunities. The Great Lakes will certainly contribute to the economic recovery of the State of Michigan and the entire Great Lakes region. They are a priceless resource which should be wisely managed for this, and future generations.



HOLLAND

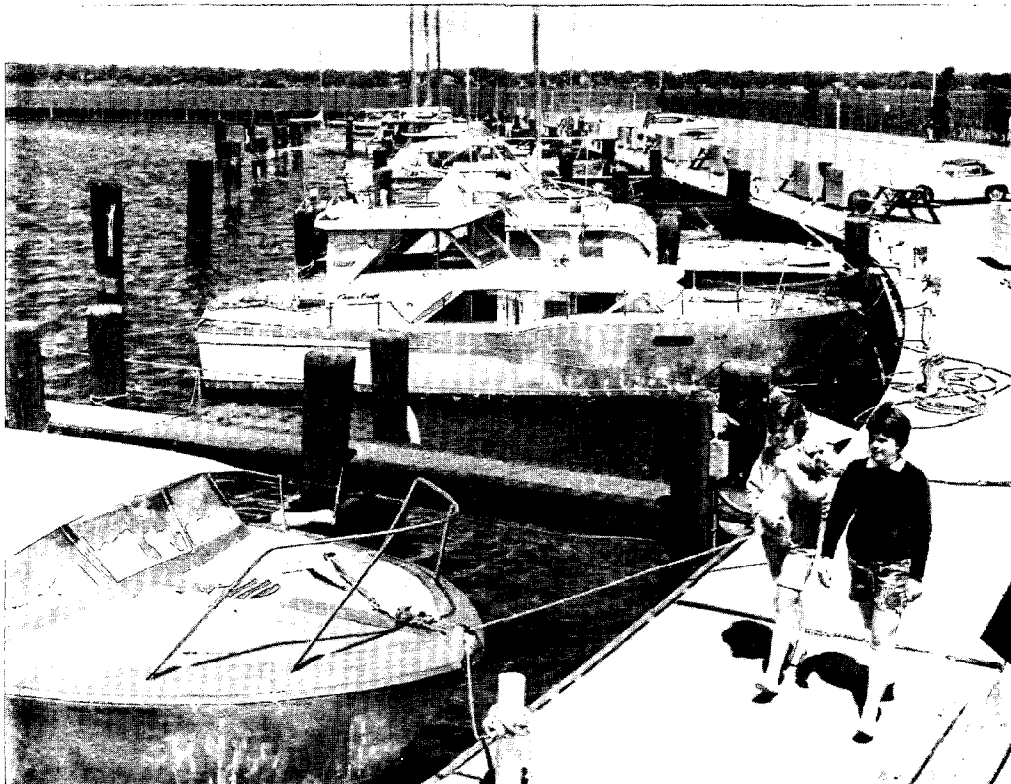
During the past five years, Michigan has received \$9 million in federal grants through the Coastal Zone Management Act of 1972 to "preserve, protect, develop, and where possible, to restore or enhance coastal resources." Michigan used these federal funds to reaffirm its historic commitment to the Great Lakes by improving the administration of numerous state statutes designed to protect and better manage our Great Lakes resources, and by providing financial assistance to local units of government for creative shoreline projects.

One unique aspect of Michigan's program was the status of "demonstration state" of the nation for utilizing coastal management funds for low-cost construction projects to preserve and restore coastal resources. These generally fell into four categories: public access restoration; sand dune preservation and interpretation; wetland preservation and interpretation; and historic restoration. Over 100 low-cost construction projects were funded during Michigan's demonstration state status, and community support was tremendous.

Due in part to Michigan's success with low-cost construction shoreline projects, the U.S. Congress amended the Coastal Zone Management Act of 1980 to include authorization to all coastal states for these projects to achieve specific tangible results in protecting and enhancing the nation's valuable coastal resources.

In addition to local government projects, the program also funded several state level projects and special studies for identified statewide needs and concerns.

Our Great Lakes fisheries resources have greatly increased in value in recent years, and awareness of the need to preserve this resource has heightened. An atlas was prepared which shows the location of valuable fish spawning areas to be protected when considering construction applications on Great Lakes bottomlands. A salmon contaminant monitoring project was conducted to identify any ecological or human health impacts of Great Lakes contaminants.



In order to better serve the public and increase effectiveness in the administration of state shoreline statutes, the Department of Natural Resources and the Army Corps of Engineers implemented a joint application process to prevent duplication of paper work and to insure coordination of decisions made by the two agencies. To further increase the efficiency of the issuance of shoreline permits and conveyances, the Coastal Management Program financed the development of the Coastal and Inland Waters Permit Information System (CIWPIS). This computer processing system, in conjunction with the joint DNR-COE permit and an expanded field staff has greatly reduced permit processing time. Concurrently, the quality of the technical review of applications has improved substantially due to the improved information base and more extensive field inspections to more effectively protect Michigan's natural resources and the public trust.

Through the Michigan Coastal Management Program, a total of over 240 projects were funded with the federal grants and many shoreline management objectives were addressed. Unfortunately, these funds have been terminated.

Although much has been accomplished, coastal management must be a continuing effort. In order to preserve and enhance our valuable Great Lakes resources for the future, the following areas of concern have been identified by the Michigan Coastal Management Program:

- Natural Hazard Area Management
- Sensitive Area Protection
- Urban Revitalization
- Commercial Navigation and Port Development
- Public Access and Recreation
- Energy Development

This brochure summarizes past coastal accomplishments and outlines continuing and future needs which are necessary to balance environmental protection with human needs and economic development along the Great Lakes shoreline.



**WARREN DUNES**

### Natural Hazard Area Management

In 1970, the Michigan Legislature passed Act 245, the Shorelands Protection and Management Act, for the protection of life, property and natural resources. The act mandates regulation of some uses and development in high risk erosion, flood risk and environmental areas along the Great Lakes shoreline. Need for the act was demonstrated by the fact that indiscriminate destruction of environmental areas and unregulated development in flood risk and high risk erosion areas had led to property losses exceeding several million dollars annually.

This act, with its consumer protection orientation, stresses prevention of damages from shoreline erosion. The act does not prohibit development in high risk erosion areas, but rather requires certain setbacks for new construction of permanent structures to protect private and public investment. Under the high risk erosion program, the first step toward protection of structures is to identify those areas of shoreline where erosion is occurring at a rate greater than one foot per year. To date, 210 miles of shoreline have been designated as high risk erosion areas in 23 of the 41 coastal counties. There is an immediate need to complete the statewide designations in the remaining coastal counties.

After completion of the initial designations, there is a continuing need for updating the survey to take into account any natural or man-made changes which may influence erosion in the area. There is also a continuing need for administration of the permitting responsibilities under this program.



LAKE MICHIGAN

In the fall of 1972 and the spring of 1973 alone, public assistance to victims of flooding amounted to over 46 million dollars. The intent of the flood risk portion of Act 245 is to minimize future flood damages by requiring certain building specifications for new structures built in designated flood risk areas. Under the flood risk program, there is a continuing need to provide technical assistance to communities in the 100-year flood plain and to local building code enforcers to meet construction requirements in flood hazard areas.

### Sensitive Area Protection

The Shorelands Management and Protection Act also protects Great Lakes shoreline environmental areas which are critical to fish and wildlife. Over the past few years, 30 coastal counties have been surveyed to identify important environmental areas with 240 miles being designated as necessary for the preservation and maintenance of fish and wildlife. There is an immediate need to survey the remaining 11 coastal counties to complete the total shoreline study. There is also a continuing need to administer the permit program to wisely manage new development in these areas.

Another Michigan statute, the Great Lakes Submerged Lands Act of 1955, protects the public trust in the lands covered with Great Lakes water. Approximately 400 applications are received annually for construction projects on the Great Lakes bottomlands, many of them major, complex projects. Decisions are made on the approval or denial of a request for a lease, deed or agreement to use the state's Great Lakes bottomlands. It is essential that the administration of this program continue to preserve and protect the interest of the general public in our Great Lakes resources and to enforce legal action against submerged land trespasses.

With financial assistance from the Coastal Management Program, 200 miles of Great Lakes sand dune areas have been designated under the state Sand Dune Protection and Management Act, Act 222 of P.A. 1976. After designation, the Department of Natural Resources is able to regulate certain sand extraction and mining activities in these areas to assure wise use and protection of the unique geological formations. Continued support is necessary to evaluate permit applications and review restoration plans for mining in these sensitive areas.



GRAND SABLE DUNES

Other approaches are also being used to protect sensitive Great Lakes resources. In a recent intensive effort to protect Michigan's largest remaining coastal wetland area, state and local officials worked together to develop an innovative management plan for the St. Clair Flats area. The plan preserves the remaining productive fish and wildlife habitat while allowing reasonable development. Opportunities as this must not be lost and it is crucial that the necessary staff and finances be available to protect unique coastal areas such as the "Flats".

The Coastal Management Program also funded numerous local government projects which protect sensitive areas while allowing public opportunity to enjoy these unique natural features.

The City of New Buffalo wanted to protect its outstanding, but highly sensitive sand dune at the city park and yet at the same time allow people to appreciate and enjoy this unique geological feature. With financial assistance from the Coastal Management Program, stairs, boardwalks and viewing platforms were built on the dune to channel pedestrian traffic away from unstable areas and allow them a breathtaking view of Lake Michigan from a platform at the top of the dune.

An expansive wetland, which is one of the largest cattail marshes on the Great Lakes, is located on the City of Cheboygan's shoreline. The wetland contains an interesting variety of plants and animals offering the potential for nature interpretation for residents and visitors to the area. To take advantage of this excellent opportunity, the Coastal Management Program provided funds to construct an elevated handicap accessible boardwalk through the wetland with a wildlife observation platform. This proved to be an effective method of providing public access and interpretation of a coastal wetland while protecting the fragile environment.

Community projects such as these have been very low-cost in comparison to the benefits achieved. Many more communities wish to protect their unique shoreline assets but local government funding continues to dwindle. Without financial assistance targeted toward protection of sensitive coastal resources, many of these areas may be lost forever.



CHEBOYGAN



### Urban Revitalization

Over the years, urban waterfront areas have deteriorated, fallen into disuse and disrepair. However, there is now a renewed awareness and interest in the use of the waterfront and the resulting economic benefits. To encourage and support waterfront improvement, the Michigan Coastal Management Program has funded several urban re-development studies.

The riverfront area south of Detroit is highly industrialized and the exterior of the buildings have gradually become dilapidated and run down. With Coastal Management Program funds, 14 communities on the Detroit River and several major industrial corporations cooperated to prepare a Visual Improvement Plan for the downriver industries. The plan, which has won state and national awards, describes inexpensive methods to improve the visual appearance of the industrial segments of the riverfront corridor. The advantages of improved appearance extend to the marketplace making it easier to attract skilled employees and new customers, and increasing the confidence of investors and financial backers.

The Uniroyal Re-use Study examined the physical and economic potential of a prime, but currently abandoned waterfront parcel now owned by the City of Detroit. Recommendations for the redevelopment of this valuable waterfront property included demolition of deteriorated buildings and marketing strategies to interest private developers. Plans are currently underway to implement the study recommendations.

In Sault Ste. Marie, the current uses of the waterfront were examined and proposed improvements were recommended. As a result of the study, the waterfront historic Locks Park walkway was built to promote tourism and public awareness of this old city's rich and varied heritage. A port development study was also conducted to evaluate the needs and the benefits of expanded port facilities.

The City of Monroe Hellenberg Field and Consolidated Packaging waterfront sites were analyzed to identify redevelopment potential. Cost-benefit analyses were conducted along with recommendations for redesign of the Hellenberg Park and the highway entrance, and expansion of marina capacity.



**DETROIT**

Another Coastal Management Program study, the Chris Craft Redevelopment Plan for the City of Algonac included a market analysis and conceptual development alternatives. The objective of the study was to determine how a marginal quality, public owned site could be developed privately, yet with a sensitivity to its shoreline location and in a manner that maintains or enhances public access to the water. The city intends to use the study to solicit interest from potential investors and developers.

It is important that we continue to wisely plan for coastal development to encourage economic growth and yet continue to preserve the integrity of the shoreline.

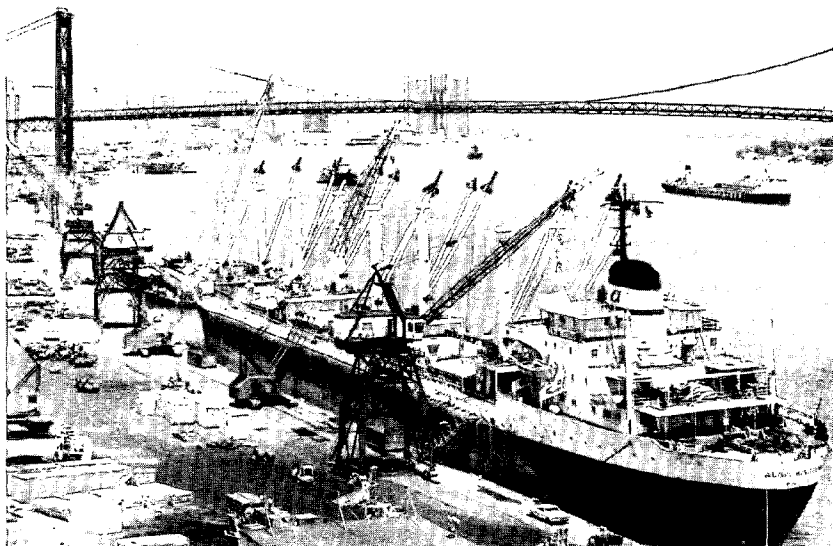
### Commercial Navigation and Port Development

The Great Lakes long transportation route provides inexpensive transportation for many types of cargo. More tonnage goes through the canal at Sault Ste. Marie than through the Suez and Panama canals combined. Great Lakes navigation was the catalyst in making this region the industrial center of the nation.

Michigan has 49 active commercial/industrial ports and harbors, and numerous small recreational ports. Although Michigan ports alone handle 100 million tons of cargo annually, many of these ports are not being utilized to their fullest potential. To determine where expansion of facilities or additional cargos might be handled, the Michigan Coastal Management Program funded several port development studies. Studies were conducted for the ports of Ludington, Escanaba, Sault Ste. Marie and St. Joseph/Benton Harbor. Unfortunately, because of the poor economic conditions in Michigan, progress on the recommendations is slow at this time.

Great Lakes shipping is of critical importance to the economy of the entire midwest and the numerous ports on the lakes, the inland modes which transport cargos to and from the ports, and to port labor. Although millions of tons of cargo are being handled in the Great Lakes transportation system, it is capable of handling much more.

Port development and commercial navigation issues must continue to be analyzed in order to be prepared to encourage facility improvements, expansion and diversification of Great Lakes shipping. It is in the best economic interest of the state and the Great Lakes region to utilize this unique resource to its fullest potential.



DETROIT

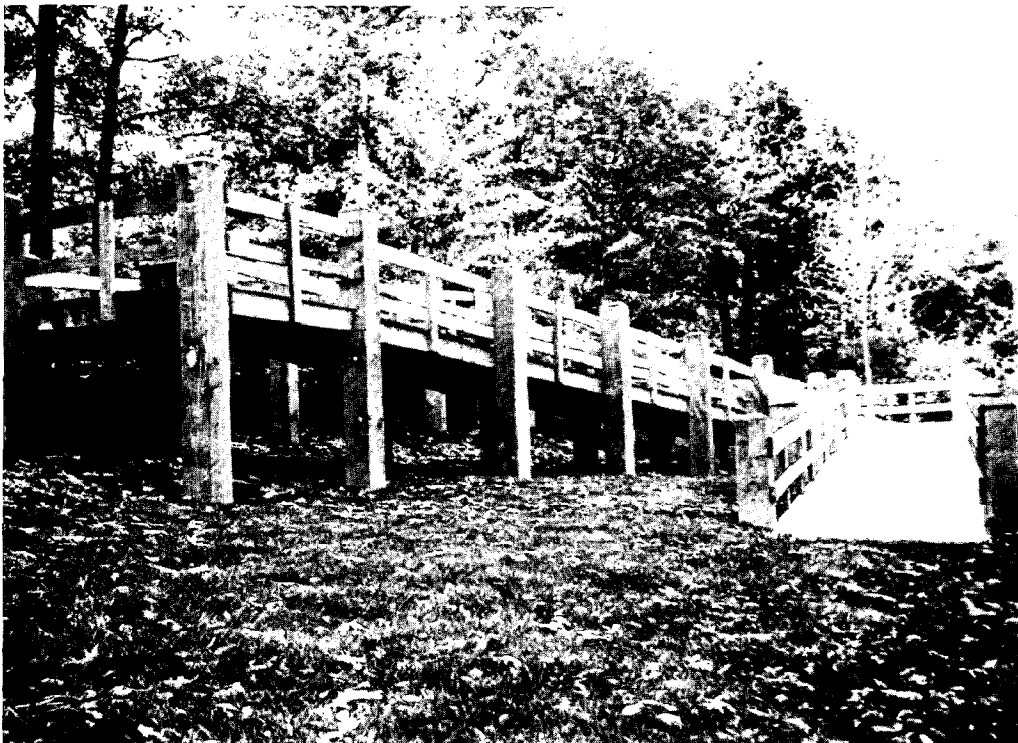
### Public Access and Recreation

Tourism and recreation is one of Michigan's most important industries. Michigan's Great Lakes coastal area is virtually unsurpassed for recreational opportunities. Fishing, boating and swimming in the cool, fresh waters attract millions of people annually who enjoy this beautiful asset. Public access to the lakes is provided by federal, state and local governments along Michigan's Great Lakes shoreline, however, additional access to the shore is in high demand.

The Michigan Coastal Management Program is committed to supporting creation of additional shoreline public access and enhancing existing access where possible. To assist communities in this effort, the program has funded numerous planning, design and low-cost construction projects over the past five years.

Along the highly industrialized Detroit waterfront, public access for recreation is scarce. To assist the city in providing access for residents and visitors, the Coastal Management Program funded engineering and site design studies for the "Linked Riverfront Parks Project" -- three public park nodes which create openings on the river edge with linear bicycle/pedestrian connections. Construction has already begun on the first of the three parks and when the entire plan has been implemented, 29 acres of waterfront property will be open to the public. In addition, the project has stimulated over \$300 million in proposed private development in the area.

The City of Trenton's 162 acre Elizabeth Park has served the urban residents of the area for over 60 years, however, over the years the park facilities had fallen into disrepair and public access to the river and bank erosion had become serious management problems. The Wayne County Road Commission, with the help of Coastal Management Program grants, built a stairway and handicap ramp down the steep bluff to the river and constructed a sturdy fishing node. The new design is wheelchair accessible from the parking lot to the river edge.



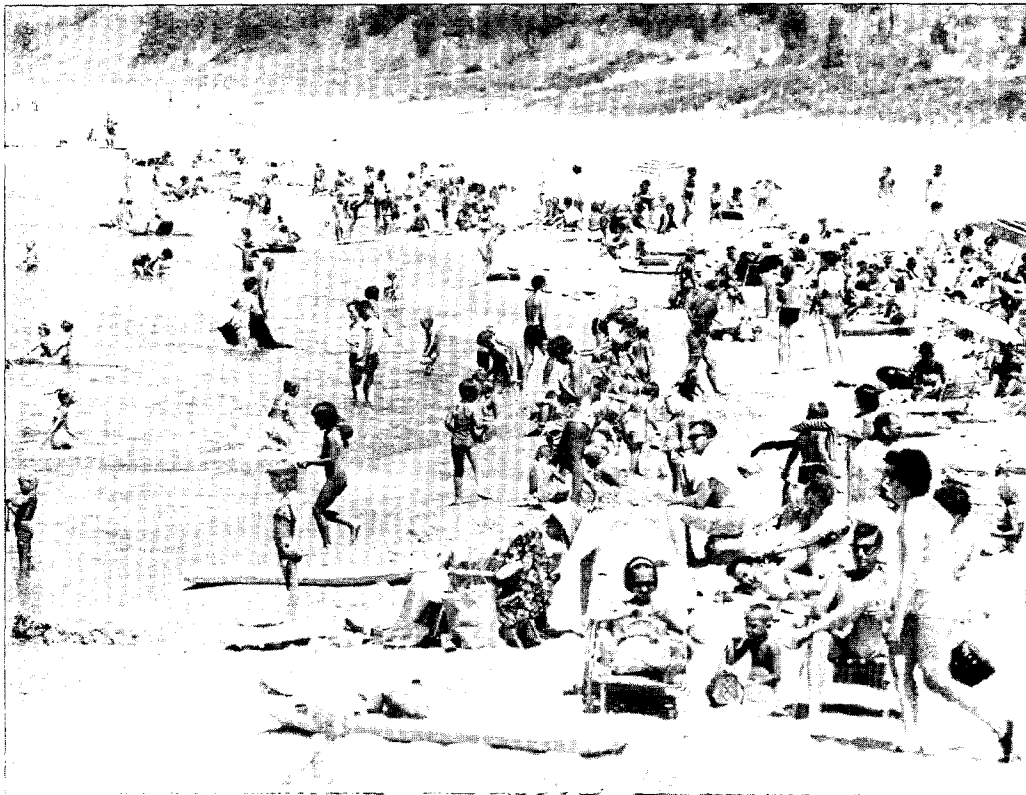
TRENTON

The program has also funded other special shoreline construction projects which provide for handicap coastal access in communities such as Mackinac City, Cheboygan, Muskegon, Grand Haven, Spring Lake, South Haven, Clay Township, Wayne County, Escanaba, Traverse City, and Holland.

Not only is it important to provide public access to the shoreline, it is necessary to inform the public as to where these areas are located and what facilities are available to them. One of the most popular and unique publications produced by the Coastal Management Program is the "Handicapper's Coastal Guide to Accessible Recreation Facilities" which was prepared during the 1981 "International Year of the Disabled Persons". The guide describes over 70 Great Lakes recreation sites and lists the types of facilities which are accessible to disabled individuals at each location.

The Coastal Management Program was also able to provide financial assistance to enhance public access at many of our coastal state parks. At Hoffmaster State Park, trails and boardwalks were constructed to provide easy, yet controlled, access for the long walk through the sand dunes to the beach. At Ludington State Park, stairs, boardwalks and observation platforms were constructed along the top of their high sand dune. The elevated observation platforms offer beautiful views of the dunes and Lake Michigan. Similar coastal management projects were accomplished at numerous other coastal state parks to benefit the visiting public.

To stimulate tourism and the related economic benefits in Michigan, we must continue to provide high quality recreational facilities along our long shoreline which offers a variety of enjoyable recreational experiences.



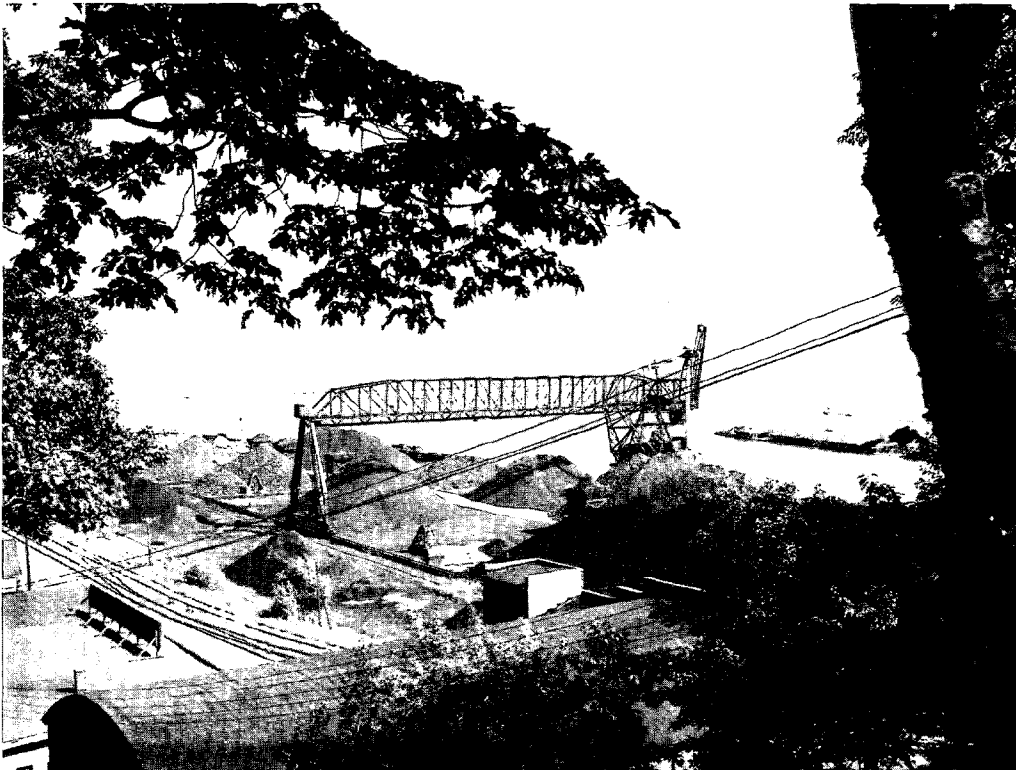
### Energy Development

Energy facilities have historically been located, and will continue to be located, along the Great Lakes shoreline due to the large amount of fresh water necessary for condensor cooling and because of the economic advantages of waterborne transportation of fuel. Approximately 22,000 megawatts of electric generating capacity of Michigan is located on the Great Lakes shoreline, or 81 percent of the total generating capacity of this state. The majority of these power plants are coal-fired, necessitating large coal storage and handling areas on the coast.

The Coastal Energy Impact Program, a part of Michigan's Coastal Management Program, has over the past several years attempted to reduce the impacts of coal storage and handling upon the environment and Great Lakes recreational areas by providing grants to over 15 coastal communities.

A recently completed project at a power plant in Grand Haven is one successful example of these efforts. To reduce fugitive coal dust upon nearby marinas and waterfront recreation areas, and to enhance the aesthetic viewing of the power plant from the downtown business district and the recreation areas, an 18-foot high, quarter mile long vegetated earthen berm was constructed in front of the coal storage area. An added benefit of this project was the creation of a linear park between the berm and the shoreline which provides public waterfront access for fishing and passive coastal recreation. The project not only improved environmental conditions and established public waterfront access, but it also has stimulated other economic improvements in nearby downtown Grand Haven.

In a statewide effort to address coal storage problems along the Great Lakes shoreline, the Coastal Energy Impact Program funded a study to recommend measures to mitigate the environmental, aesthetic and economic impacts associated with coal storage. The resultant award winning document lists numerous recommendations to be considered in each site specific situation.



MARQUETTE

Due to the need for huge amounts of cooling water for the operation of power plants, fish losses at these locations are occurring at an alarming rate. Over the past decade, sport fishing on the Great Lakes has become an important industry. Technologies must be explored and mitigative measures installed at these plants to reduce fish losses to protect this valuable resource and preserve our fishing industry.

While recognizing the need for electric power and supporting the national objective of obtaining a greater degree of energy self-sufficiency, the Coastal Energy Impact Program provides financial assistance to minimize losses of valuable coastal resources resulting from energy facilities and developments. There is a continuing need to analyze problems and reduce impacts at existing coastal energy facilities, most of which were constructed before public awareness of the value of our coastal resources. In addition, new energy facility construction and operation must be planned wisely to balance energy needs with the loss of other coastal resource benefits.



### Summary

Even though numerous outstanding projects have been completed through the coastal management grants, many shoreline conflicts and coastal opportunities still exist. This year, over one million dollars worth of requests for assistance were received from 40 coastal communities with serious coastal concerns and needs. The majority of them were disappointed, however, when only \$170,000 was available for local projects, and the funding for the future is even more discouraging. It is essential that a source of funding be obtained to continue to assist local governments with these important management projects on our long but fragile shoreline.

Much also remains to be accomplished with our state coastal statutes, such as the Shorelands Protection and Management Act. High risk erosion designations have been made in only half of our coastal counties. This information is vital to protect shoreline homeowners in natural hazard areas. And environmental area designations have been made in only 30 of the 41 coastal counties. It is necessary to wisely manage our decreasing wetland habitat areas to protect our valuable remaining fish and wildlife resources.

Funding is also needed to continue to exercise our shoreline permitting responsibilities for construction, dredging, and filling in Great Lakes bottomlands under the Great Lakes Submerged Lands Act. Activities must not be allowed that will impair or adversely affect the public use of the lands.

Continued attention to the revitalization of our urban waterfront areas and commercial ports is essential to economic growth and development in our state. These areas will play a major role in achieving industrial prosperity.

Providing public access to our shoreline must remain a priority government responsibility. The economic benefits of Great Lakes recreation in Michigan should not be underestimated.

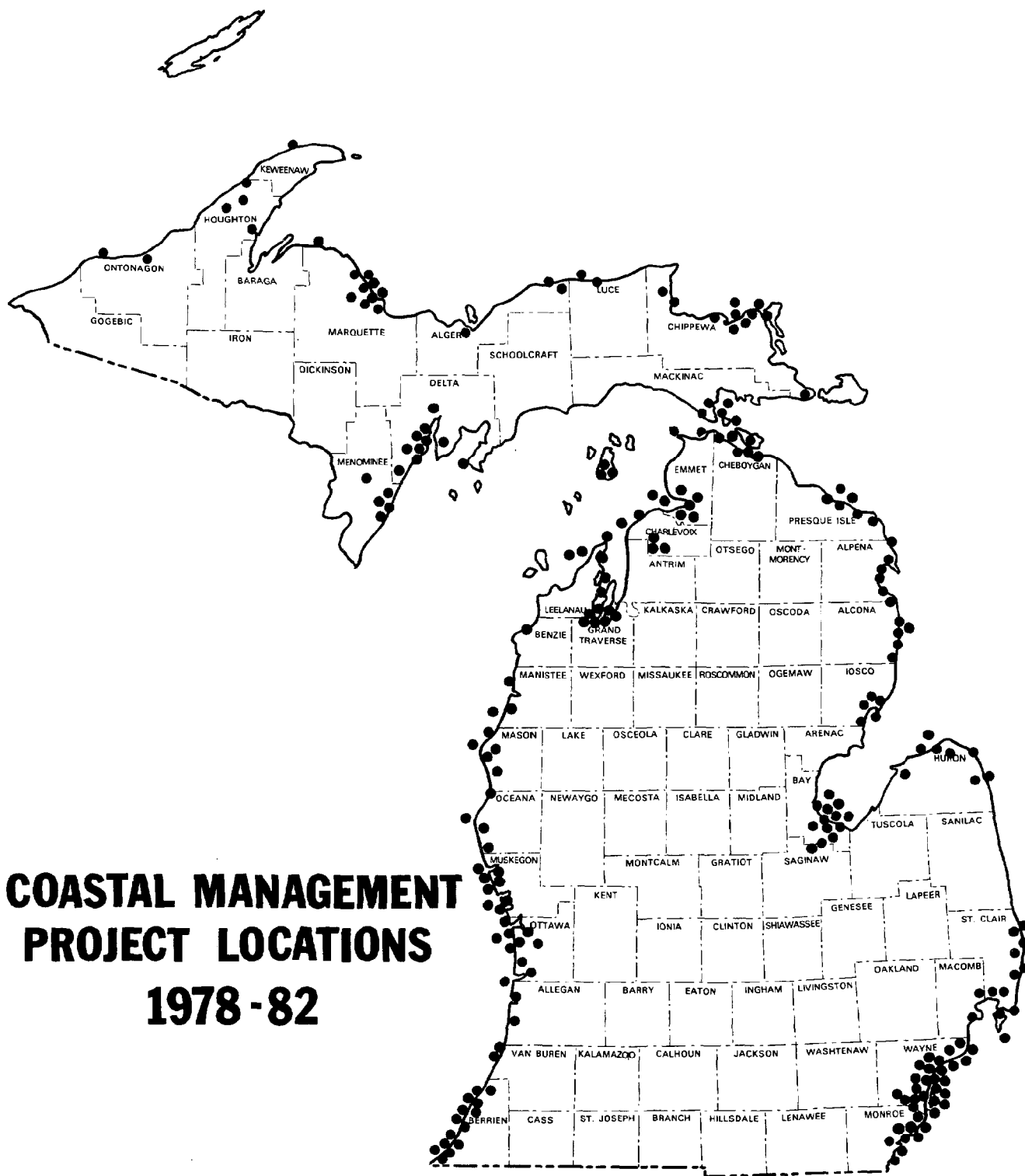
Energy development in coastal areas cannot be ignored as technologies are being improved and energy needs are changing. We must encourage the development of environmentally acceptable, and economically feasible alternative energy systems and technologies which are specifically suitable for coastal locations.

Our Great Lakes certainly will contribute to the economic recovery of Michigan, and the entire Great Lakes region. It is critical that funding is continued for the wise management and protection of this priceless natural resource.

For additional information, contact: Michigan Coastal Management Program, Division of Land Resource Programs, Department of Natural Resources, P.O. Box 30028, Lansing, Michigan 48909 (517/373-1950).

**SAY YES TO MICHIGAN!**

**COASTAL MANAGEMENT  
PROJECT LOCATIONS  
1978-82**





"Without the help of your agency funding and staff help, the City of Houghton would have allowed this valuable (waterfront) asset to remain a blight on our city border."

HOUGHTON  
Raymond C. Kestner  
City Manager

"Work with your office has been a real pleasure. Paper work has been held to a minimum while the objectives of the Coastal Management Program are well maintained."

BAY CITY  
E. W. Kivisto  
City Planner

"This project could not have taken place without the incentive of funds from the Coastal Energy Impact Program and also the initiative and cooperation from the Department of Natural Resources."

GRAND HAVEN  
Larry R. Deetjen  
City Manager

"... I have been especially impressed by the technical assistance and dedication of those involved in the Coastal Management Program..."

TRAVERSE CITY  
Lawrence Muzzarelli  
Mayor

"...we appreciate the program's ability to be flexible enough to respond to the varied and ever changing needs of each of the grantees and to assure maximum benefit to the users, of each dollar spent."

HOLLAND CHARTER TOWNSHIP  
Willis E. Driesenga  
Superintendent

"The participation of the Department of Natural Resources, through the Coastal Zone Management Program, has provided a lasting tribute to the history and enhancement of our waterfront, while at the same time creating lasting jobs in our tourist industry."

SAULT STE. MARIE  
Jerald A. Peters  
Mayor

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